

**REMARKS**

**I. Status of the Application**

By the present amendment, Applicant amends claims 1, 6-8, 16, 19, 29, 31 and 35-36.

Applicant also hereby cancels claims 5, 23 and 33-34 without prejudice or disclaimer. Claims 1-4, 6-22, 24-32 and 35-36 are all the claims pending in the Application, with claims 1 and 19 being in independent form. Claims 1-36 have been rejected.

The present amendment addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

**II. Claim Rejections under 35 U.S.C. §112**

First, the Examiner has rejected claims 35 and 36 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Applicant respectfully traverses these rejections for *at least* the reasons set forth below.

“To satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.” MPEP §2163.02. Moreover, in order to comply with the written description requirement, the specification “need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the [filing] date the applicant had invented what is now claimed.” *Dental Prodx, LLC v. Advantage Dental Prods.*, 309 F.3d 774, 779; 64 USPQ2d 1945, 1950 (Fed. Cir. 2002).

To adequately support a written description requirement rejection, the Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would

not recognize in an applicant's disclosure a description of the invention defined by the claims.

MPEP § 2163.04. Here, the grounds of rejection allege that there is no discussion that the light covers at least a million measurement points at any given instant of time. 09/12/06 Office Action, p. 2. Applicant respectfully disagrees.

The present specification plainly describes that, “[c]onsistent with the present invention, it is proposed that the measurement of the axle geometry, or the determination of a normal vector of a wheel, is accomplished preferably via a full-surface projection of light...” and further that “[t]he light reflected from the face of the wheel is then recorded as a full-surface image by an image converter.” Paragraph 013.

Moreover, the specification explains that, whereas conventional methods only yield a few measurement points, methods and apparatuses consistent with the present invention, for example, “yield[s] the direct and enormous advantage that, instead of only a few measurement points being available... several million measurement points are available for evaluation purposes.” Paragraph 013.

Therefore, Applicant submits that a skilled artisan would easily recognize from the present specification that, since methods consistent with the present invention project light over the full-surface of a wheel, and then record the light reflected from the face of the wheel as a full-surface image comprising several million measurement points at a given instant in time, then such methods would necessarily encompass a light projection unit which projects light over at least a million measurement points at a given instant in time, as claimed.

Indeed, the Examiner has failed meet his burden of presenting evidence or reasons as to why persons skilled in the art would not recognize in the present specification a description of a light projection unit which projects light over at least a million measurement points at a given instant in time. Accordingly, the present specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, Applicant was in possession of methods which yield at least a million measurement points, as recited in claims 35 and 36. As such, Applicant respectfully requests that the Examiner withdraw these rejections for *at least* the aforementioned reasons.

Secondly, the Examiner has also rejected claims 35 and 36 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. In particular, the grounds of rejection allege that when the machine is not taking any measurements, the light projection unit does not project light over at least a million measurement points at a given instant in time, as claimed. Applicant has amended claims 35 and 35, as set forth above, to correct the informalities noted by the Examiner and respectfully requests that the Examiner withdraw these rejections.

### III. Claim Rejections under 35 U.S.C. §103 – Schulz in view of Nobis

The Examiner has rejected claims 1-2, 4-5, 13-14, 17-19, 22-23, 25-26, 29-30 and 32-34 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,198,877 to Schulz (hereinafter “Schulz”), in view of U.S. Patent No. 6,397,164 to Nobis (hereinafter “Nobis”). The Examiner has also rejected claims 3 and 21 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schulz in view of Nobis, and in further view of U.S. Patent No. 5,274,433 to Madey (hereinafter “Madey”). Additionally, the Examiner has rejected claims 15 and 27 under

35 U.S.C. § 103(a) as allegedly being unpatentable over Schulz, in view of Nobis, and further in view of U.S. Patent No. 4,745,469 to Waldecker (hereinafter “Waldecker”). The Examiner has rejected claims 6-8 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schulz, in view of Nobis, and further in view of U.S. Patent No. 5,812,256 Chapin (hereinafter “Chapin”). The Examiner has also rejected claims 9-10 and 31 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schulz, in view of Nobis, and further in view of U.S. Patent No. 4,097,157 to Lill (hereinafter “Lill”). Moreover, the Examiner has rejected claims 11-12 and 24 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schulz, in view of Nobis, and further in view of U.S. Patent No. 5,969,246 to Jackson (hereinafter “Jackson”). Finally, the Examiner has rejected claims 16 and 28 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schulz, in view of Nobis, and further in view of U.S. Patent No. 3,376,411 to Montani (hereinafter “Montani”). Applicant respectfully traverses these rejections for *at least* the independent reasons stated below.

As an initial matter, Applicant notes that claims 5, 23 and 33-34 have been canceled without prejudice or disclaimer and, therefore, the Examiner’s rejections with respect to these claims are now moot.

In order for the Examiner to maintain a rejection under 35 U.S.C. § 103, the cited references, or some combination thereof, must teach or suggest all of the recitations of the claims 1-2, 4, 13-14, 17-19, 22, 25-26, 29-30 and 32. Applicant respectfully submits that neither the cited references, nor any combination thereof, teaches or suggests all of the recitations of claims 1-2, 4, 13-14, 17-19, 22, 25-26, 29-30 and 32.

A. Independent Claim 1

Independent claim 1 requires (among other things):

A method for determining an axle geometry by recording and evaluating a single graylevel image or single color image of a face of a wheel fitted to an axle, the method comprising:

projecting light, which is spread over the face to be evaluated, wherein a coding is projected with the light, from a projecting direction...

...determining three-dimensional surface coordinates of at least substantially the entire face to be evaluated from said single graylevel image or said single color image using triangulation...

The grounds of rejection allege that Figure 1 of Schulz teaches the feature of projecting light, as recited in claim 1. Applicant respectfully disagrees with the grounds of rejection.

Claim 1 recites the feature of projecting light, which is spread over the face of a wheel to be evaluated, and determining three-dimensional surface coordinates of at least substantially the entire face to be evaluated. In stark contrast to the requirements of claim 1, Schulz teaches that the light beam projecting apparatus 14, which is housed in the hand held scanner head 12, directs a narrow beam of light, or scanning beam 42, onto the surface 40 of object 38 to illuminate a spot 36 on the surface 40. However, no aspect of Schulz teaches, or even remotely suggests, the feature of projecting light, which is spread over the face to be evaluated, or of determining three-dimensional surface coordinates of at least substantially the entire face to be evaluated, as

claimed. In fact, Schultz teaches quite the opposite—that the light beam projecting apparatus 14 directs a narrow scanning beam 42 to illuminate a tiny spot 36.

What is more, neither Nobis nor Chapin remedy the deficient teachings of Schulz. To the contrary, Nobis merely teaches that a measuring mark 8 is affixed to a wheel. However, Nobis provides no teaching or suggestion whatsoever regarding the feature of projecting light, which is spread over the face to be evaluated, or of determining three-dimensional surface coordinates of at least substantially the entire face to be evaluated, as claimed.

Likewise, Chapin also fails to teach or suggest this feature. In contrast, Chapin merely teaches that the laser beam depicted in Figure 6 thereof “is flat and places a line of light into the field of view 130 which will intersect with any object within the field of view.” Column 9, lines 13-15. Further, Chapin teaches that “[t]he camera records the cross sectional line of intersection of the laser beam and the object in the field of view 130.” Column 9, lines 15-17. Therefore, Chapin teaches that a flat line of laser light is projected and that a cross sectional line of intersection is recorded. Such teachings are completely different from projecting light, which is spread over the face to be evaluated, or of determining three-dimensional surface coordinates of at least substantially the entire face to be evaluated, as claimed.

Therefore, Applicant submits that independent claim 1 is patentable over the cited references for *at least* the reasons discussed above. Further, Applicant submits that claims 2-4 and 6-18 are patentable over the cited references *at least* by virtue of their dependency.

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**AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No. 10/724,234**

Attorney Docket No. Q78613

Additionally, the “Response to Arguments” section of the 09/12/06 Office Action alleges that Schulz teaches a spot, that the entire spot in Schulz is color coded, and that, therefore, the entire area that the spot takes up is color coded. Applicant respectfully disagrees.

It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). In the 09/12/06 Office Action, the grounds of rejection have not cited to any particular aspect of Schultz to support the conclusory assertion that the entire spot 36 taught in Schultz is color coded. Indeed, the grounds of rejection have not provided any evidentiary support whatsoever for this bald assertion. Therefore, the Examiner has not established the requisite factual basis to support a legal conclusion of obviousness.

In fact, the teachings of Schultz clearly refute such an assertion. Schultz merely teaches that the detectors 26, 28 and 30 need to distinguish which of the pilot light emitters 20, 22 and 24 is “on” or illuminated at any one time. Column 9, lines 13-15; Figure 1. Accordingly, Schultz teaches that in order for the detectors 26, 28 and 30 to distinguish which of the pilot light emitters 20, 22 or 24 is “on” or illuminated at any one time, the pilot light emitters 20, 22 or 24 may be strobed or illuminated in sequence. Column 9, lines 12-18. Alternatively, Schultz teaches that different colors of light could be used in conjunction with detectors capable of distinguishing those particular colors or wavelengths of light. Column 9, lines 18-23.

But, as explained in detail in the previous Amendment under 37 C.F.R. § 1.111, which was filed on 01/10/06, even assuming *arguendo* that the feature of configuring the pilot light emitters 20, 22 or 24 to emit different colors did correspond to “coding,” as recited in claim 1, as alleged

in the grounds of rejection (which Applicants firmly submit they do not), Schulz nevertheless fails to provide any teaching or suggestion whatsoever that the projecting apparatus 14 projects the scanning beam 42 over spot 36 wherein any of such alleged “codings” are projected with the scanning beam 42.

In fact, as taught in Schulz, the light emitted from the pilot light emitters 20, 22 or 24 is never even projected over spot 36, nor is such light ever reflected to the one-dimensional spot sensors 16 and 18. To the contrary, Schulz teaches that the light emitted from the pilot light emitters 20, 22 or 24 is transmitted to the remotely located pilot light sensors 26, 28 and 30 and not to the surface 40 of object 38 to illuminate a spot 36. Column 6, lines 1-3; column 6, lines 26-30; Figure 1; Figure 2. Therefore, Schulz cannot possibly teach or suggest that the pilot light emitters 20, 22 or 24 project light spread over the spot 36 wherein a coding is projected with the light emitted from the pilot light emitters 20, 22 or 24. As such, Schulz does not teach, and is incapable of suggesting, the feature of projecting light, which is spread over the face to be evaluated, wherein a coding is projected with the light, as recited in claim 1.

Indeed, the grounds of rejection have not offered any response whatsoever to the arguments advanced to this effect in the previous Amendment filed on 01/10/06. Nevertheless, MPEP §707.07(f) explicitly requires that “[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant’s argument and answer the substance of it” (emphasis added). Therefore, Applicant’s previous arguments remain unrebutted and the pending claims are allowable *at least* for the reasons previously of record.

What is more, the grounds of rejection also fail to offer any substantive response to Applicant's previous arguments that the grounds of rejection have failed to provide a proper motivation to combine the disparate teachings of Schulz and Nobis. Previously, Applicant noted that the grounds of rejection failed to identify any evidentiary support that teaches or suggests the desirability of combining the Schulz and Nobis references in the specific manner proposed by the grounds of rejection. Indeed, Applicant pointed out that the grounds of rejection set forth in the 08/10/05 Office Action merely allege that “[i]t would have been obvious to modify Schulz to use the object sensing device for axle geometry as taught by Nobis to merely further implement the broad teachings of Schulz with no new or unexpected changes,” and that such an alleged motivation (i.e., “to merely further implement the broad teachings of Schulz”) is insufficient as a matter of law. 08/10/05 Office Action, page 2.

In response to Applicant's previous arguments, the 09/12/06 Office Action merely alleges that “[b]ecause Schultz' invention pertains to all three dimensional objects, it would be impossible to include the specifics of measuring every three dimensional object.” However, such a response still fails to identify any motivation to combine the teachings of Schulz and Nobis.

First, the grounds of rejection do not provide any evidentiary support whatsoever for the sweeping allegation that Schultz's invention pertains to all three dimensional objects. In fact, the teachings of Schultz nowhere suggest that the apparatus therein can be used to measure all three dimensional objects. To the contrary, Schultz only teaches an apparatus comprising a hand-held scanning head and, therefore, even under the broadest reasonable interpretation of Schultz, the

teachings therein are, at the very least, limited to unspecified three dimensional objects that can be scanned with a hand-held device. *See* column 5, lines 54-60. Accordingly, the assertion in the grounds of rejection that Schultz's invention pertains to all three dimensional objects is factually unsupported.

Secondly, even assuming *arguendo* that Schultz's invention did pertain to all three dimensional objects (which Applicant firmly submits that Schultz does not), the grounds of rejection have still failed to identify any motivation whatsoever for one to look beyond the four corners of Schultz to incorporate the teachings of Nobis. The grounds of rejection merely allege that “[i]t would have been obvious to modify Schulz to use the object sensing device for axle geometry as taught by Nobis to merely further implement the broad teachings of Schulz with no new or unexpected changes.” 08/10/05 Office Action, page 2.

However, such a conclusory allegation that a skilled artisan would have been motivated to combine Schulz with Nobis “to further implement” the teachings of Schulz fails to identify any reason why it would be desirable for a skilled artisan “to further implement” the teachings of Schulz and, more specifically, why it would be desirable for a skilled artisan “to further implement” the particular teachings of Schulz by combining Schulz's teachings with the disparate teachings of Nobis. It is well-established that in the absence of evidence which suggests the desirability of combining references in a proposed manner, such combination is not available to preclude patentability under 35 U.S.C. § 103. (See King Instrument Corp. v. Otari Corp., 226 U.S.P.Q. 402 (Fed. Cir. 1985)).

Thus, the grounds of rejection demonstrate classic impermissible hindsight analysis. Indeed, otherwise, unsupported statements and conclusions of obviousness are considered inadmissible hindsight. *See, e.g., In re Geiger*, 2 USPQ2d 1276 (Fed. Cir. 1987), *Panduit Corp. v. Dennison Mfg. Co.*, 1 USPQ2d 1593 (Fed. Cir. 1987), *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984), *Ex parte Clapp*, 227 USPQ 972 (Pat. Off. Bd. App. & Inter. 1985), *Ex parte Shepard and Gushue*, 188 USPQ 537 (Pat. Off. Bd. App. 1974).

Finally, the “Response to Arguments” section alleges that Applicant previously argued that “color coding is not coding that the applicant claims.” 09/12/06 Office Action, p. 9. This allegation is factually unsupported—Applicant has never alleged that “color coding” cannot comprise a “coding” as claimed. Quite to the contrary, with the previous Amendment filed on 01/10/06, Applicant merely argued that none of the features of configuring the pilot light emitters 20, 22 or 24 to strobe, illuminate in sequence, emit different colors, or to be modulated with a unique “tone,” as taught in Schultz, correspond to “coding,” as recited in claim 1.

In view of the above, Applicant respectfully submits that claims 1-4 and 6-18 are patentable over the cited references for *at least* the aforementioned reasons, and Applicant respectfully requests that the Examiner withdraw these rejections.

**B. Independent Claim 19**

Independent claim 19 requires (among other things):

A sensor for determining an axle geometry by recording and evaluating a single graylevel image or single color image of a face of a wheel fitted to an axle, the sensor comprising:

a light projection unit which projects light, which is spread over the face to be evaluated, wherein a coding is projected with the light, from a projecting direction...

an evaluation unit which determines three-dimensional surface coordinates of at least substantially the entire face to be evaluated from said single graylevel image or said single color image using triangulation...

In view of the similarity between these requirements and the requirements discussed above with respect to independent claim 1, Applicant respectfully submits that arguments analogous to the foregoing arguments as to the patentability of independent claim 1 demonstrate the patentability of claim 19. As such, it is respectfully submitted that claim 19 is patentably distinguishable over the cited references *at least* for reasons analogous to those presented above. Further, Applicant submits that the dependent claims 20-22, 24-32 and 35-36 are allowable *at least* by virtue of their dependency on claim 19. Thus, the allowance of these claims is respectfully solicited of the Examiner.

#### IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

**AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No. 10/724,234**

**Attorney Docket No. Q78613**

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**23373**  
CUSTOMER NUMBER

Date: January 12, 2007